searching the image data stored in the first area in the storage order of the plurality of image data.

REMARKS

Claims 1, 3-7, 9-13, and 15-19 are pending in this application. Claims 1, 7, 13, and 19, the independent claims, have been amended to define still more clearly what Applicants regard as their invention.

Claims 1, 4, 7, 10, 13, 16, and 19 were rejected under 35 U.S.C. § 103(a) as being obvious from U.S. Patent 4,602,333 to Komori in view of U.S. Patent 6,424,385 to Koyama et al.; Claims 5, 11, and 17, as obvious from Komori in view of Koyama et al., and further in view of U.S. Patent 4,949,287 to Yamaguchi et al.; and Claims 2, 3, 6, 8, 9, 12, 14, 15, and 18, as being obvious from Komori in view of Koyama et al., and further in view of U.S. Patent 6,078,005 to Kurakake et al.

The present invention is directed to the storing of images in databases, and to improvements in techniques for searching for a desired image. As explained in more detail in the specification, the standard approaches in this field often result in certain problems. For example, it often takes a very long period of time to access the images, particularly if the number of images is large. Also, management operations such as file movement and the like are often troublesome, particularly for a large number of images. The present invention is intended to ameliorate these and other problems, which have plagued the prior art.

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Claim 1 is directed to an image storage method. According to the method, a plurality of image data is continuously stored in a first area of a single file. Reference information, for accessing a source outside the file, which pertains to each of the plurality of image data stored in the image storage step, is stored in a storage order of the plurality of image data in a second area of the file. The reference information includes location information for accessing image data which is a higher resolution version of the corresponding image data stored in the first area. The single file stores both the plurality of image data and the reference information. A third area in the file is assured, and feature amount data is stored including a plurality of components that may be utilized for searching the image data stored in the first area in the storage order of the plurality of image data

Among the notable features of Claim 1 are the three areas included in a single file: the first area for storing a plurality of image data, the second area for storing reference information for accessing a source outside the file, and the third area for storing feature amount data including a plurality of components that can be utilized for searching the image data stored in the first area in the storage order of the plurality of imge data. By virtue of such features, because a plurality of image data may be managed by a single file while the data size of the single file is kept small, management of a plurality of image data is facilitated. Further, a desired image may be searched for using various information stored in the third area. Moreover, the feature amount data are stored in the storage order of the plurality of image data in the first area. Accordingly, the searching speed may be enhanced, because an image may be specified based on a position of searched feature data.

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Komori, as understood by Applicants, relates to a data file storing image data (both compressed and non-compressed data). The image processing apparatus of Komori includes an image data production device, a main memory, a compression circuit, a write circuit, a magnetic disk, a read circuit, an expansion circuit, and an image processing device. The magnetic disk has at least two storage areas. The compressed image data and the non-compressed image data are made from one image data, and the compressed image data has priority over the non-compressed image data in the storage operation of the magnetic disk.

The Office Action concedes (at page 3) that "Komori does not teach storing reference information, wherein the reference information includes location information for accessing image data which is a higher resolution version of the corresponding image data stored in the first area..." The Office Action also concedes (at page 8) that "Komori as modified does not teach the method further comprising a feature amount storage step of assuring a third area in the file, and storing feature amount data corresponding to the image data stored in the first area in the storage order of the plurality of image data." Thus, Komori fails to teach or suggest storing reference information and feature amount data.

Kurakake et al., as understood by Applicants, relates to an apparatus for reproducing multimedia events including musical events and visual events arranged in synchronization to the musical events. The Office Action (at page 8) alleges that "feature amount" reads on "feature property" of Kurakake et al. However, the "feature property" of Kurakake et al.is utilized to reproduce images, whereas the "feature amount" as recited in Claim 1 is utlized to search images. Accordingly, Kurakake et al. fails to teach or suggest

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storing feature amount data including a plurality of components that can be utilized for searching image data, as claimed in Claim 1.

Koyama et al., as understood by Applicants, relates to a still image system that handles still image data produced by scanning pictures of, e.g., a negative film or a photograph print, or received from a camera. However, Koyama et al. is understood to be silent regarding the feature amount data of Claim 1.

Applicants have found nothing in Komori, Kurakake et al., or Koyama, either considered separately or in any permissible combination (if any) that would teach or suggest a single file including a first area for storing a plurality of image data, a second area for storing reference information for accessing a source outside the file, and a third area for storing feature amount data including a plurality of components that may be utilized for searching the image data stored in the first area in the storage order of the plurality of image data, as recited in Claim 1.

Accordingly, Claim 1 is seen to be clearly allowable over Komori, Kurakake et al., and Koyama, taken separately or in any permissible combination (if any).
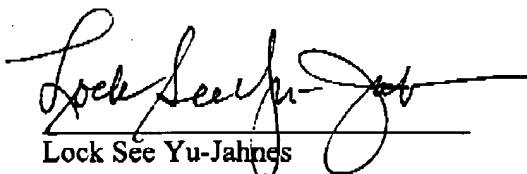
Independent Claims 7, 13, and 19 recite features similar to Claim 1, and are believed to be patentable for at least the same reasons as discussed above in connection with Claim 1. The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

This Amendment After Final Action is believed clearly to place this application in condition for allowance and its entry is therefore believed proper under 37 C.F.R. § 1.116. Accordingly, entry of this Amendment After Final Action, as an earnest effort to advance prosecution and reduce the number of issues, is respectfully requested. Should the Examiner believe that issues remain outstanding, the Examiner is respectfully requested to contact Applicants' undersigned attorney in an effort to resolve such issues and advance the case to issue.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

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